Appl. No. 09/927,712
Amdt. sent May 4, 2004
Reply to Office Action of November 5, 2003

PATENT

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1   1.   (Original): A computer system comprising:

2   at least one server appliance for processing data;

3   at least one disk apparatus for storing said data; and

4   means for changing said server appliance for processing the data in such a manner

5   that access means employed in another server appliance, which is different from said server

6   appliance for processing said data, can access said disk apparatus.

1   2.   (Original): A computer system as claimed in claim 1 wherein:

2   said data is partitioned to be stored in multiple number of disk apparatuses; and

3   said access means of said server appliance accesses said disk apparatuses storing

4   the partitioned data,

5   whereby loads of said disk apparatuses are distributed.

1   3.   (Original): A computer system as claimed in claim 1 wherein:

2   a port of said disk apparatus for storing the data and a port of said server

3   appliance for processing said data are changed to distribute loads of said ports, said ports being

4   used to transfer data between said disk apparatus and said server appliance.

1   4.   (Original): A computer system as claimed in claim 2 wherein:

2   when said data is partitioned to be stored in multiple number of disk apparatuses,

3   data copy means of said disk apparatus is used.

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1   5.   (Original): A computer system comprising:

2   at least one server appliance for processing data;

3   at least one disk apparatus for storing said data;

4   means for partitioning said data to process partitioned data by a plurality of server

5 appliances, and for dividing processing for said data into processing for said partitioned data; and

6   means for changing said server appliance for processing said partitioned data in

7 such a manner that said partitioned data are respectively stored in disk apparatuses, and that

8 access means of another server appliance other than said server appliance for processing said

9 partitioned data accesses said disk apparatuses.

1   6.   (Original): A computer system as claimed in claim 5 wherein:

2   said server appliance for processing said partitioned data is changed, whereby a

3 load of said computer system is distributed.

1   7.   (Original): A computer system as claimed in claim 5 wherein:

2   said partitioned data is further partitioned;

3   said further-partitioned data are stored in multiple number of disk apparatuses;

4 and

5   said access means of said server appliance accesses the multiple number of disk

6 apparatuses storing the further-partitioned data,

7   whereby loads of said disk apparatuses are distributed.

1   8.   (Original): A computer system as claimed in claim 5 wherein:

2   a port of said disk apparatus for storing said partitioned data and a port of said

3 server appliance for processing said partitioned data are changed to distribute loads of said ports,

4 said ports being used to transfer data between said disk apparatus and said server appliance.

1   9.   (Original): A computer system as claimed in claim 7 wherein:

2   when said partitioned data is further partitioned to be stored in multiple number of

3 disk apparatuses, data copy means of said disk apparatus is used.

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1   10.   (Original): A computer system comprising:

2   a plurality of server appliances for processing data;

3   a plurality of disk apparatuses for storing said data;

4   means for switching connections between said plurality of server appliances and

5 said plurality of disk apparatus; and

6   a management server program for detecting a load of processing for said data, for

7 instructing one of said plurality of disk apparatuses to partition said data, and for instructing to

8 connect said server appliances and said disk apparatuses to said switching means.

1   11.   (New): A computer system comprising:

2   a storage apparatus including a plurality of disks in which data has been stored;

3   a plurality of first server computers connected to said storage apparatus through a

4 network; and

5   a management computer for managing both said storage apparatus and said first

6 server computers, wherein one of said first server computers is in data communication for

7 exchange of data with a first disk,

8   said management computer being operable to perform a change wherein another

9 of said first server computers is in data communication with said first disk, so that said exchange

10 of data with said first disk is performed by said other of said first sever computers instead of said

11 one of said first server computers.

1   12.   (New): The computer system according to claim 11, further comprising a

2 plurality of second server computers in communication with said first server computers, said

3 second server computers communicating with said first computers in order to access said storage

4 apparatus in accordance with requests from client computers, said first server computers in data

5 communication with said client computers, whereby data from said storage apparatus is

6 delivered to said client computes via said first server computers.

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1   13.   (New): The computer system according to claim 12, wherein each of said

2   second server computers includes association information that provides an association among

3   data to be accessed, identifiers of said disks on which said data are stored, and identifiers said

4   first sever computers that are in data communication with said disks, wherein in response to

5   receiving a request a one of said second server computers from one of said client computers said

6   one of said second server computers consults said association information to identify one or

7   more of said first server computers to access data in order to service said request.

1   14.   (New): The computer system according to claim 13, wherein said

2   management computer includes an indication unit operable to present a first indication area and a

3   second indication area,

4   said first indication area having first symbols that represent elements comprising

5   one or more of said first server computers, one or more of said disks, and one or more of said

6   second server computers, and having second symbols which indicate communication among said

7   elements,

8   said second indication area having third symbols that represent one or more of

9   said first server computers and one or more of said disks,

10   wherein said management computer performs a change of communication among

11   some of said elements in said first indication area, in accordance with an indication for moving

12   one of said third symbols to said first indication area.

1   15.   (New): The computer system of claim 11, wherein said management

2   computer is operable to effect said change if it is determined that said other of said first server

3   computers is capable of accessing said first disk.

1   16.   (New): The computer system according to claim 11, wherein said storage

2   apparatus further includes a plurality of ports and said each of said first computer servers

3   includes a port, wherein said management computer is further operable change an association

4   between said ports of said storage apparatus and said ports of said first computer servers.